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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/008,253	11/09/2001	Gian Francesco Lorusso	KLA1P035	2556

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EXAMINER
GURZO, PAUL M

ART UNIT	PAPER NUMBER
2881	

DATE MAILED: 02/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/008,253	Applicant(s) LORUSSO ET AL.	
	Examiner Paul Gurzo	Art Unit 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-21 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-21 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 09 November 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Priority

Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 119(e) as follows:

An application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence of the specification or in an application data sheet (37 CFR 1.78(a)(2) and (a)(5)).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6,10-12, and 17-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Iwasaki (4,983,830).

Regarding claims 1,2,10,11, Iwasaki teaches a method for inspecting a specimen by detecting electrons that scatter comprising the steps of scanning and directing the electron beam (1) for irradiation (col. 1, lines 46-55 and fig. 2), setting a filter at a first and second voltage level, detecting the scattered electrons at both voltage levels, and determining the differential intensity levels (col. 3, lines 43-50, col. 4, lines 31-35, and claim 1). He further teaches the ability to repeat these steps and to generate an image of the specimen (col. 4, lines 1-6). It is

inherent that the voltage levels are can be set to at successively higher and/or lower increments up to the level of the electron beam.

Regarding claim 3, Iwasaki teaches that the scattered electrons are secondary electrons (col. 2, lines 50-61), and it is inherent that the voltage levels encompass an energy spectrum so that the secondary electrons are detected.

Regarding claims 4-6, Isawaki teaches the detection of desired secondary electrons, and it is inherent that he sets the voltage to the desired levels so that selective detection occurs (col. 3, lines 43-50), and he teaches measuring the potential of the surface of an integrated circuit (col. 2, lines 59-61), which is a doped semiconductor wafer.

Regarding claim 12, Iwasaki teaches a method for inspecting a specimen by detecting electrons that scatter comprising the steps of scanning and directing the electron beam (1) for irradiation (col. 1, lines 46-55), setting a filter at a first and second voltage level, detecting the scattered electrons at both voltage levels, and determining the differential intensity levels (col. 3, lines 43-50, col. 4, lines 31-35, and claim 1). He further teaches the ability to repeat these steps and to generate an image of the specimen (col. 4, lines 1-6). It is inherent that the voltage levels are can be set to at successively higher and/or lower increments up to the level of the electron beam. Further, the image that is determined from the different voltages (col. 2, lines 28-37 and col. 4, lines 1-6) can easily be found at numerous times during the detection.

Regarding claim 17, Iwasaki teaches that the scattered electrons are secondary electrons (col. 2, lines 50-61), and it is inherent that the voltage levels encompass an energy spectrum so that the secondary electrons are detected.

Regarding claims 18 and 19, Isawaki teaches the detection of desired secondary electrons, and it is inherent that he sets the voltage to the desired levels so that selective detection occurs (col. 3, lines 43-50), and he teaches measuring the potential of the surface of an integrated circuit (col. 2, lines 59-61), which is a doped semiconductor wafer.

Regarding claims 20 and 21, Iwasaki teaches a method for inspecting a specimen by detecting electrons that scatter comprising the steps of scanning and directing the electron beam (1) for irradiation (col. 1, lines 46-55), setting a filter at a first and second voltage level, detecting the scattered electrons at both voltage levels, and determining the differential intensity levels (col. 3, lines 43-50, col. 4, lines 31-35, and claim 1). He further teaches the ability to repeat these steps and to generate an image of the specimen (col. 4, lines 1-6). It is inherent that the voltage levels are can be set to at successively higher and/or lower increments up to the level of the electron beam. He teaches the use of a control computer system that is arranged to set the filter to the appropriate voltage levels (col. 1, line 65 - col. 2, line 2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 7-9 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki (4,983,830), and further in view of Lo et al. (6,344,750).

Regarding claim 7, Iwasaki teaches a method for inspecting a specimen by detecting electrons that scatter comprising the steps of scanning and directing the electron beam (1) for

irradiation (col. 1, lines 46-55), setting a filter at a first and second voltage level, detecting the scattered electrons at both voltage levels, and determining the differential intensity levels (col. 3, lines 43-50, col. 4, lines 31-35, and claim 1). He further teaches the ability to repeat these steps and to generate an image of the specimen (col. 4, lines 1-6). It is inherent that the voltage levels are can be set to at successively higher and/or lower increments up to the level of the electron beam.

Iwasaki does not explicitly teach scanning a first and second material on the specimen, but Lo et al. teach scanning a first and second area (col. 4, lines 33-46), which can obviously mean an area on the same specimen, or an area on a different specimen. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to scan multiple areas/materials so that comparison of the acquired images will identify defects in the patterned substrate.

Regarding claims 8 and 9, Iwasaki teaches the generation of an image as described above and that the scattered electrons are secondary electrons (col. 2, lines 50-61), and it is obvious that the voltage levels encompass an energy spectrum so that the secondary electrons are detected.

Regarding claims 13-15, Lo et al. teach a real-time control computer (92) having a real-time operating system (col. 8, lines 36-47, and Fig. 2). This real-time operating system means that the images are continuously generated and that the voltage application and energy determination is performed simultaneously.

Regarding claim 16, Lo et al. teach the use of scanning two different areas as described above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Gurzo whose telephone number is (703) 306-0532. The examiner can normally be reached on M-Thurs. 7:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached on (703) 308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

PMG
February 13, 2003

JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800